WHAT IS CLAIMED IS:

1. A method of joining two member by friction stir welding, comprising the steps of:

arranging said members so that respective joint faces thereof are adjacent each other, providing a joint region, and

inserting, at one side of said members, a friction stir welding probe of material harder than that of said members into both said members at the location of the adjacent joint faces thereof, and rotating said probe so as to effect friction stir welding to join said members, forming a joining region,

wherein at least one of said members has, at said one side thereof, a raised portion which is adjacent said joint face thereof and protrudes towards the probe so as to make the joint region thicker than a remaining region of each member, said raised portion being contacted by said probe during the friction stir welding and at least partially removed by the probe, and the method further includes cutting off the part of said raised portion remaining after the friction stir welding by said probe.

2. A method according to claim 1, wherein a gap between said joint faces of the members before welding is filled with the material of the raised portion during the welding.

3. A method according to claim 2, wherein, following the friction stir welding and the cutting off of said part of said raised portion, said members,

as seen in cross-section across the joining region, have substantially flat and mutually flush joined surfaces at said one side thereof.

4. A method according to claim 2, wherein the method comprises substantially wholly removing said raised portion after the friction stir welding so that said members, as seen in cross-section across the joining region, have substantially flat and mutually flush joined surfaces at said one side thereof.

5. A method according to claim 4, wherein both of said members are provided respectively with said raised portion, and the method comprises substantially wholly removing both of the raised portions so that said members, as seen in cross-section across the joining region, have substantially flat and mutually flush surfaces at said one side thereof.

6. A method according to claim 5, wherein said raised portion, prior to the friction stir welding, stands up higher than any other part of the member having the raised portion, at said one side of the members.

7. A method according to claim 5, wherein said raised portion is constituted by a local thickening of the member having the raised portion, at said joint face thereof.

8. A method according to claim 7, wherein each of said members is provided with said raised portion, the respective raised portions

substantially abutting each other when said joint faces are adjacent each other, and said probe contacts and at least partially removes both said raised portions.

9. A method according to claim 8, wherein each raised portion is in one piece with the member on which it is provided.

10. A method according to claim 8, wherein said raised portion is a separate piece connected to said member on which it is provided prior to the friction stir welding.

11. A method according to claim 8, wherein said raised portion is on one member and extends over the other member when said members are arranged for welding, and said probe penetrates through said raised portion when inserted into the members.

12. A method according to claim 11, wherein by the friction stir welding, a welding bead is formed at a region of said two members beneath the location of said raised portion.

13. A method according to claim 12, wherein said two members are first and second metal panels which are joined together edge-to-edge to form a panel structure by the friction stir welding,

each of said first and second panels having at said one side a first face sheet and at its opposite side a web parallel to and spaced from said first

face sheet, and having at least one cross-member connecting said face sheet and said web,

said first face sheets of said first and second panels being joined directly by a weld joint, at which a weld bead is formed by the friction stir welding,

said cross-member of at least one of said panels constituting a weld-support cross-member which has one end located at an edge of the panel at which said weld joint is provided, extends across the panel in a transverse direction which is at an angle to said first face sheet of the panel, and has a thickness and location such that said welding bead lies at least partly in a projection area of said cross-member in said transverse direction.

14. A method according to claim 13, wherein each of said first and second panels has said weld-support cross-member at respective edges at which said weld joint is provided, the respective weld-support cross-members lying alongside each other.

15. A method according to claim 14, including forming two of said weld joints at opposite sides of the panel structure by twice performing the friction stir welding, said two weld joints lying respectively at opposite ends of said weld-support cross-members.

16. A method according to claim 15, wherein said web of each of said first and second panels is a second face sheet.

17. A method according to claim 16, wherein, at said edges of said first and second panels at which said at least one weld joint is formed, said first and second face sheets thereof are comprised of a sheet member and a portion of a reinforcing edge body which is connected by brazing to said sheet member, said welding bead is formed in both said sheet member and said reinforcing edge body, and said reinforcing edge body provides said weld-support cross-member.

18. A method according to claim 13, wherein said first face sheet of one of said panels has a projecting edge portion and the other of said panels has a recess receiving said projecting edge portion.

19. A method according to claim 18, wherein said web of one of said first and second metal panels also has a projecting edge portion and said web of the other of said panels has a recess receiving said projecting edge portion of said web of said one of said first and second metal panels.

20. A method according to claim 1, wherein the method comprises substantially wholly removing said raised portion after the friction stir welding so that said members, as seen in cross-section across the joining region, have substantially flat and mutually flush joined surfaces at said one side thereof.

21. A method according to claim 20, wherein both of said members are provided respectively with said raised portion, and the method comprises

substantially wholly removing both of the raised portions so that said members, as seen in cross-section across the joining region, have substantially flat and mutually flush surfaces at said one side thereof.

22. A method according to claim 1, wherein said raised portion, prior to the friction stir welding, stands up higher than any other part of the member having the raised portion, at said one side of the members.

23. A method according to claim 1, wherein said raised portion is constituted by a local thickening of the member having the raised portion, at said joint face thereof.

24. A method according to claim 1, wherein each of said members is provided with said raised portion, the respective raised portions substantially abutting each other when said joint faces are adjacent each other, and said probe contacts and at least partially removes both said raised portions.

25. A method according to claim 1, wherein each raised portion is in one piece with the member on which it is provided.

26. A method according to claim 1, wherein said raised portion is a separate piece connected to said member on which it is provided prior to the friction stir welding.

27. A method according to claim 1, wherein said raised portion is on one member and extends over the other member when said members are arranged for welding, and said probe penetrates through said raised portion when inserted into the members.

28. A method according to claim 1, wherein by the friction stir welding, a welding bead is formed at a region of said two members beneath the location of said raised portion.

29. A method according to claim 1, wherein said two members are first and second metal panels which are joined together edge-to-edge to form a panel structure by the friction stir welding,

each of said first and second panels having at said one side a first face sheet and at its opposite side a web parallel to and spaced from said first face sheet, and having at least one cross-member connecting said face sheet and said web,

said first face sheets of said first and second panels being joined directly by a weld joint, at which a weld bead is formed by the friction stir welding,

said cross-member of at least one of said panels constituting a weld-support cross-member which has one end located at an edge of the panel at which said weld joint is provided, extends across the panel in a transverse direction which is at an angle to said first face sheet of the panel, and has a thickness and location such that said welding bead lies at least partly in a projection area of said cross-member in said transverse direction.

30. A method according to claim 29, wherein each of said first and second panels has said weld-support cross-member at respective edges at which said weld joint is provided, the respective weld-support cross-members lying alongside each other.

31. A method according to claim 30, including forming two of said weld joints at opposite sides of the panel structure by twice performing the friction stir welding, said two weld joints lying respectively at opposite ends of said weld-support cross-members.

32. A method according to claim 31, wherein said web of each of said first and second panels is a second face sheet.

33. A method according to claim 32, wherein, at said edges of said first and second panels at which said at least one weld joint is formed, said first and second face sheets thereof are comprised of a sheet member and a portion of a reinforcing edge body which is connected by brazing to said sheet member, said welding bead is formed in both said sheet member and said reinforcing edge body, and said reinforcing edge body provides said weld-support cross-member.

34. A method according to claim 29, wherein said first face sheet of one of said panels has a projecting edge portion and the other of said panels has a recess receiving said projecting edge portion.

35. A method according to claim 34, wherein said web of one of said first and second metal panels also has a projecting edge portion and said web of the other of said panels has a recess receiving said projecting edge portion of said web of said one of said first and second metal panels.